

70. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

(b) a mounting base subsystem removably coupled to said memory subsystem, wherein

said mounting base subsystem protects and includes therein electronic circuits for electronically accessing said memory subsystem.

71. A hardened voyage data recorder according to claim 70, wherein:

said electronic circuits provide an ETHERNET access port for coupling said hardened voyage recorder to an ETHERNET network.

72. A hardened voyage data recorder according to claim 71, wherein:

said electronic circuits include firmware which provides TCP/IP access over ETHERNET to said circuits.

73. A hardened voyage data recorder according to claim 72, wherein:

said firmware includes web pages for configuring said hardened voyage data recorder.

74. A hardened voyage data recorder according to claim 70,
wherein:

said mounting base subsystem includes at least one
watertight cable connector.

75. A hardened voyage data recorder according to claim 71,
wherein:

said mounting base subsystem includes a first watertight
cable connector for coupling with a power supply and a second
cable connector for coupling with an ETHERNET network.

76. A hardened voyage data recorder according to claim 70,
wherein:

said electronic circuits accept both 110/220 VAC and 24 VDC
power supplies.

77. A hardened voyage data recorder according to claim 70,
further comprising:

a quick release clamp, wherein
said removable memory subsystem has a lower flange, said
mounting base subsystem has an upper flange, and said quick
release clamp engages said upper flange and said lower
flange whereby said memory subsystem and said base
subsystem are removably coupled to each other.

78. A hardened voyage data recorder according to claim 77,
wherein:

said quick release clamp has two quick release levers.

79. A hardened voyage data recorder according to claim 70,
wherein:

said removable memory subsystem includes non-volatile
memory enclosed within a boiler.

80. A hardened voyage data recorder, comprising:

- (a) a removable memory subsystem having a lower flange;
- (b) a mounting base subsystem having an upper flange; and
- (c) a quick release clamp engaging said upper flange and
said lower flange whereby said memory subsystem and said
base subsystem are removably coupled to each other.

81. A hardened voyage data recorder according to claim 80,
wherein:

said quick release clamp has two quick release levers.

82. A hardened voyage data recorder according to claim 80,
wherein:

said mounting base subsystem includes at least one
watertight cable connector.

83. A hardened voyage data recorder according to claim 80,
wherein:

said mounting base subsystem includes a first watertight
cable connector for coupling with a power supply and a second
cable connector for coupling with a data source.

84. A hardened voyage data recorder according to claim 80,
wherein:

one of said upper flange and said lower flange has a groove
adapted to receive an O-ring.

85. A hardened voyage data recorder according to claim 80,
wherein:

said upper flange has two concentric grooves, each adapted
to receive an O-ring.

86. A hardened voyage data recorder according to claim 85,
further comprising:

one o-ring and one mesh gasket, one disposed in one of said
two concentric grooves and the other disposed in the other of
said two concentric grooves.

87. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem; and

(b) a mounting base subsystem removably coupled to said
memory subsystem, wherein

said removable memory subsystem includes non-volatile
memory enclosed within a boiler, and

said mounting base subsystem is adapted to be mounted on
the exterior of a marine vessel.

88. A hardened voyage data recorder according to claim 87,
wherein:

said mounting base subsystem includes at least one
watertight cable connector.

89. A hardened voyage data recorder according to claim 87,
wherein:

said mounting base subsystem includes a first watertight cable connector for coupling with a power supply and a second cable connector for coupling with a data source.

90. A hardened voyage data recorder according to claim 87,
further comprising:

a quick release clamp, wherein
said removable memory subsystem has a lower flange,
said mounting base subsystem has an upper flange, and
said quick release clamp engages said upper flange and said lower flange whereby

said memory subsystem and said base subsystem are removably coupled to each other.

91. A hardened voyage data recorder according to claim 90,
wherein:

said quick release clamp has two quick release levers.

92. A hardened voyage data recorder according to claim 90,
wherein:

one of said upper flange and said lower flange has a groove adapted to receive an O-ring.

93. A hardened voyage data recorder according to claim 90,
wherein:

said upper flange has two concentric grooves, each adapted
to receive an O-ring.

94. A hardened voyage data recorder according to claim 93,
further comprising:

one o-ring and one mesh gasket,

one disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric grooves.

95. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

(b) a mounting base subsystem removably coupled to said
memory subsystem; and

(c) at least one memory interface converter chip coupled to
said removable memory subsystem.

96. A hardened voyage data recorder according to claim 95,
wherein:

said mounting base subsystem includes at least one
watertight cable connector.

97. A hardened voyage data recorder according to claim 95,
wherein:

said mounting base subsystem includes a first watertight
cable connector for coupling with a power supply and a second
cable connector for coupling with a data source.

98. A hardened voyage data recorder according to claim 95,
further comprising:

a quick release clamp, wherein
said removable memory subsystem has a lower flange,
said mounting base subsystem has an upper flange, and
said quick release clamp engages said upper flange and said
lower flange whereby

said memory subsystem and said base subsystem are removably
coupled to each other.

99. A hardened voyage data recorder according to claim 98,
wherein:

said quick release clamp has two quick release levers.

100. A hardened voyage data recorder according to claim 98,
wherein:

one of said upper flange and said lower flange has a groove
adapted to receive an O-ring.

101. A hardened voyage data recorder according to claim 98,
wherein:

said upper flange has two concentric grooves, each adapted
to receive an O-ring.

102. A hardened voyage data recorder according to claim 101,
further comprising:

one o-ring and one mesh gasket, one disposed in one of said
two concentric grooves and the other disposed in the other of
said two concentric grooves.

103. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem, wherein said removable
memory subsystem includes a stacked memory and a plurality of
memory interface chips arranged for communication with a
processor such that a large number of memory chips may be
driven; and

(b) a mounting base subsystem removably coupled to said
memory subsystem.

104. A hardened voyage data recorder according to claim 103,
wherein:

said mounting base subsystem includes at least one
watertight cable connector.

105. A hardened voyage data recorder according to claim 103,
wherein:

said mounting base subsystem includes a first watertight
cable connector for coupling with a power supply and a second
cable connector for coupling with a data source.

106. A hardened voyage data recorder according to claim 103,
further comprising:

a quick release clamp, wherein
said removable memory subsystem has a lower flange,
said mounting base subsystem has an upper flange, and
said quick release clamp engages said upper flange and said
lower flange whereby said memory subsystem and said base
subsystem are removably coupled to each other.

107. A hardened voyage data recorder according to claim 106,
wherein:

said quick release clamp has two quick release levers.

108. A hardened voyage data recorder according to claim 106,
wherein:

one of said upper flange and said lower flange has a groove
adapted to receive an O-ring.

109. A hardened voyage data recorder according to claim 106,
wherein:

said upper flange has two concentric grooves, each adapted
to receive an O-ring.

110. A hardened voyage data recorder according to claim 109,
further comprising:

one o-ring and one mesh gasket,

one disposed in one of said two concentric grooves and the
other disposed in the other of said two concentric grooves.